

CLAIMS

1. A modular storage system where at least some of its components are connected directly or indirectly along vertical and horizontal directions to a support structure, said system comprising,

at least one pair of panels, said panels being spaced apart and connected to the support structure by a plurality of panel clip members,

each panel clip member including one segment connected to the support structure and another segment connected to a panel,

each said panel clip members orienting the panel to which it is connected substantially vertically and extending outward from the support structure at substantially a right angle, and

at least one substantially horizontally oriented member extending between the panels.

2. The modular storage system of Claim 1 where the horizontally oriented member is a shelf.

3. The modular storage system of Claim 2 where the shelf is adjustable.

4. The modular storage system of Claim 2 where the shelf is fixed.

5. The modular storage system of Claim 1 where the panel clip members are detachably connected.

6. The modular storage system of Claim 1 including at least one cabinet.

7. The modular storage system of Claim 1 including one at least door.
8. The modular storage system of Claim 7 including a doorframe for the door.
9. The modular storage system of Claim 1 including at least one drawer.
10. The modular storage system of Claim 1 including at least one drawer front.
11. The modular storage system of Claim 1 including at least one face frame.
12. The modular storage system of Claim 1 including molding.
13. The modular storage system of Claim 1 including lighting.
14. The modular storage system of Claim 1 including signage.
15. The modular storage system of Claim 1 including at least one bin.
16. The modular storage system of Claim 1 including at least one cubbyhole.
17. A modular storage system comprising
at least one pair of spaced apart rail members, each rail member

mounted on a substantially vertically oriented support structure in a substantially horizontal orientation,

at least one pair of panels space apart and detachably connected to the rail members by a plurality of panel clip members,

each panel clip member having a predetermined configuration that orients the panel to which it is connected substantially vertically and to extend from the support structure at substantially a right angle, and

at least one shelf member extending between the pair of panels in a substantially horizontal orientation.

18. A modular storage system comprising

at least one pair of spaced apart rail members, each rail member mounted on a substantially vertically oriented support structure in a substantially horizontal orientation,

at least one pair of panels space apart and mounted substantially vertically to extend from the support structure at substantially a right angle,

said panels being connected to the rail members by a plurality of panel clip members, and

at least one shelf member extending between the pair of panels in a substantially horizontal orientation, said shelf member having opposed ends with one opposed end connected to one panel by a first pair of spaced apart shelf clip members and the other opposed end connected to the other panel by a second pair of spaced apart shelf clip members.

19. The modular storage system of Claim 18 where each shelf clip member is detachable and comprises first and second finger elements

intersecting to form a substantially right angle with respect to each other, the first finger element being above the second finger element and detachably connected to one panel and the second finger element being detachably connected to one opposed end of the shelf member, and a third finger element extending outward at the intersection of the first and second finger elements to form an angle greater than 90° and less than 180° with respect to one of the first and second finger elements, said third finger being detachably connected to said one panel.

20. The modular storage system of Claim 19 where said one panel forms one side of the modular storage system and includes a substantially planar section having opposed sides and opposed lateral edges, only one of said opposed sides having a pair of spaced apart longitudinally extending slots therein with a series of openings nearby each slot in a row extending substantially longitudinally, each said row being substantially parallel to its nearby slot.

21. The modular storage system of Claim 20 where one of the opposed lateral edges has therein a substantially longitudinally extending slot into which extends a portion of at least one of the panel clip members.

22. The modular storage system of Claim 18 including a third panel between the pair of panels, said third panel including a substantially planar section having opposed sides, both of said opposed sides having a pair of spaced apart longitudinally extending slots therein with a series of openings nearby each slot in a row extending substantially longitudinally, each said row being substantially parallel to its nearby

slot.

23. The modular storage system of Claim 18 where the shelf member has a cavity on an underside thereof nearby an edge thereof that receives a portion of one shelf clip member upon connection therewith.

24. The modular storage system of Claim 18 where at least one pair of the panel clip members is interactive with only one side of a panel to which it is connected.

25. The modular storage system of Claim 18 where at least one pair of the panel clip members is interactive with both sides of a panel to which it is to be connected.

26. The modular storage system of Claim 18 including a right hand side panel, a left hand side panel, and a center side panel.

27. The modular storage system of Claim 26 including a pair of right hand panel clip members detachably connected to the right hand side panel, pair of left hand panel clip members detachably connected to the left hand side panel, and pair of center panel clip members detachably connected to the center panel.

28. The modular storage system of Claim 18 where each rail member comprises an elongated body member having opposed ends, each opposed end including a connector element interacting with a vertical upright to detachably connect the rail member to the vertical upright.

29. The modular storage system of Claim 28 where the connector

element comprises a pair of prong elements spaced apart a predetermined distance greater than the length of one indexing site of a series of equally spaced apart indexing sites along the vertical upright, enabling the prong elements to be detachably connected to a pair of said sites separated by at least one indexing site.

30. The modular storage system of Claim 29 where the prong elements are substantially at a right angle with respect to the body member of the vertical upright.

31. The modular storage system of Claim 18 including
a shelf attachment device that interacts with a vertical upright including a series of indexing sites positioned in an equally spaced apart sequence,

said shelf attachment device comprising an elongated body with at least one segment detachably connected to at least one of the rail members and configured to orient the shelf attachment device substantially vertically,

said elongated body having an edge including a series indexing sites in a row, each site being in a predetermined position in an equally spaced apart sequence substantially identical to the position of the indexing sites along the vertical upright.

32. The modular storage system of Claim 18 including a shelf manager attachment that is detachably connected to a rail member, said shelf manager attachment including at least one support member adapted to carry a shelf member thereon and allow said shelf member to be moved laterally.

33. The modular storage system of Claim 18 where there are a pair of longitudinal grooves in each vertical panel at an angle with respect to a side of the panel that is greater than about 5° and less than 90°, with each groove in the pair pointing away from each other.
34. The modular storage system of Claim 18 including at least one pair of substantially identical shelf brackets, both brackets of said pair detachably connected to a common rail member to position substantially horizontal a shelf member attached thereto.
35. The modular storage system of Claim 34 where each shelf bracket comprises a pair of planar elements spaced apart a distance substantially equal to the thickness of a shelf member to be attached thereto and said shelf member has an edge disposed between the planar elements.
36. The modular storage system of Claim 18 including at least one shelf bracket having a first segment adapted to be detachably connected one rail member and a second segment adapted to support a shelf member on a top portion thereof.
37. The modular storage system of Claim 18 including at least one shelf bracket having a first segment adapted to be detachably connected to one rail member and a second segment including an upper edge with at least one pair of spaced apart grooves therein that interact with a storage member of the modular storage system.
38. A modular storage system including
a gondola support having a base and a plurality of uprights in a

row extending from the base at an angle of substantially 90° , said uprights including a series of indexing sites positioned in an equally spaced apart sequence,

a first rail member detachably connected to an adjacent pair of uprights to form a right angle with respect to the uprights, said first rail member having at each opposed ends thereof a connector element that engages one of the indexing sites along the upright to detachably connect the rail member to the upright,

a second rail member spaced from said first rail member and connected to said adjacent pair of uprights to form a right angle with respect to the uprights, said second rail member having at each opposed ends thereof a connector element that engages at least one of the indexing sites along the upright to detachably connect the rail member to the upright,

a first panel detachably connected to the rail members by first and second spaced apart panel clip members, the first clip member having one segment that detachably connects to the first rail member and another segment that engages an inner lateral edge of the first panel, and the second clip member having one segment that detachably connects to the second rail member and another segment that engages an inner lateral edge of the first panel along another portion than the segment of the first clip member,

a second panel spaced apart and nearby the first panel and detachably connected to the rail members by third and fourth spaced apart panel clip members, the third clip member having one segment that detachably connects to the first rail member and another segment that engages an inner lateral edge of the second panel, and the fourth clip member having one segment that detachably connects to the second rail member and another segment that engages an inner lateral

edge of the second panel along another portion than the segment of the third clip member,

said first and second panels being substantially parallel to each other and substantially a right angle to the base, and

at least one support member extending between the first and second panels substantially at a right angle thereto and detachably connected to said panels.

39. A panel clip member adapted to detachably connect to a horizontal orientated rail member a panel in a vertical orientation, said clip member comprising

a first segment adapted to be detachably connected the rail member and a second segment adapted to be detachably connected to the panel,

said second segment including an arm member configured to extend outward from the first segment substantially at a right angle to said rail member upon attaching the first segment to said rail member, said arm having a terminal edge section at an acute angle with respect to the arm member that is adapted to be inserted into a longitudinal slot in the panel.

40. The panel clip member of Claim 39 where the terminal edge section includes at least one aperture through which a pin may be partially inserted to enable one portion of the pin to engage the arm member and another portion of the pin to be inserted into an opening in a side of the panel.

41. The panel clip member of Claim 39 has a predetermined shape enabling it to interact with both right-handed and left-handed panels.

42. The panel clip member of Claim 39 including a pair of spaced apart arm members forming an open mouth with spaced apart lips having planar surfaces, said arms flexing away from each other upon insertion into the open mouth of a lateral edge of the panel and grasping the panel which fits snugly between the arms, said lips orienting the panel vertically when the first segment is connected to the horizontal orientated rail member.

43. The panel clip member of Claim 39 where the first segment comprises a hook element adapted to be placed over an edge portion of the rail member.

44. The panel clip member of Claim 39 configured to be interactive with only one side of a panel to which it is to be connected.

45. The panel clip member of Claim 39 configured to be interactive with both sides of a panel to which it is to be connected.

46. A panel clip member made from a sheet of material that is cut and bent to form said clip member, which comprises

a hook element including (a) a first substantially planar section, (b) a second substantially planar section integral with a first end of the first planar section and at substantially a right angle to said first section, (c) a third substantially planar section integral with a second end of the first planar section and at substantially a right angle to said first section, and

a panel connector element including (a) a first outward extending planar arm integral with one edge of the hook element's third planar

section and at substantially a right angle to said third planar section, said first planar arm having a terminal edge section at an acute angle with respect to the first planar arm, and (b) a second outward extending planar arm integral with another edge of the hook element's third planar section and at substantially a right angle to said third planar section, said second planar arm terminating in a substantially straight edge.

47. The panel clip member of Claim 46 where the sheet material has a thickness from 1/16 to 1/2 inch, the first planar section has a length from 1/4 to 1 inch, and the second and third sections each have a width substantially equal to the width of the first section.

48. The panel clip member of Claim 47 where the first planar arm has a length from 1 to 1 1/2 inch.

49. The panel clip member of Claim 46 where the terminal edge section includes at least one aperture through which a pin may be partially inserted to enable one portion of the pin to engage the arm member and another portion of the pin to be inserted into an opening in a side of the panel.

50. A shelf clip member adapted to detachably connect to a vertically orientated panel, said shelf clip member comprising

first and second finger elements intersecting to form a substantially right angle with respect to each other, the first finger element being above the second finger element,

a third finger element extending outward from the intersection of the first and second finger elements to form an angle greater than 90°

with respect the first and second finger elements,

said third finger element being adapted to be detachably connected to a panel, said first finger element being adapted to be detachably connected to a shelf, and said second finger element being substantially flush with a panel upon said shelf clip member being connected to the panel.

51. The shelf clip member of Claim 50 where the first and second finger elements each have therein a hole adapted to be aligned with an opening in a side of the vertically oriented panel upon connection of the shelf clip member to said one side panel.

52. The shelf clip member of Claim 50 where the finger elements are substantially planar.

53. The shelf clip member of Claim 51 where the finger elements have a substantially identical configuration, each having an outer raised tip adapted to engage an underside of a shelf, said finger elements being positioned relative to each other with their respective tips pointing in opposite directions.

54. A shelf clip member made from a sheet of material that is cut and bent to form said clip member, said shelf clip member comprising

first and second planar finger elements intersecting to form a substantially right angle with respect to each other, the first finger element being integral with and above the second finger element,

said first and second finger elements each (a) having therein a hole adapted to be aligned with an opening in a side of a vertically oriented panel upon connection of the shelf clip member to said one

side of the panel, and (b) each having an outer raised tip adapted to engage an underside of a shelf, said finger elements being positioned relative to each other with their respective tips pointing in opposite directions, and

a third planar finger element extending outward from the intersection of the first and second finger elements to form an angle greater than 90° with respect the first and second finger elements.

55. The shelf clip member of Claim 54 where the sheet material has a thickness from 1/16 to 1/2 inch.

56. The shelf clip member of Claim 55 where the third planar finger element has a width substantially equal to the combined width of the first and second planar finger elements and projects outward from a common edge defining the intersection of the first and second planar finger elements, said third planar finger being integral with said common edge.

57. A rail member comprising

an elongated body member having opposed ends, each opposed end including a connector element adapted to interact with a vertical upright to detachably connect the rail member to the vertical upright,

each connector element comprising a pair of prong elements spaced apart a predetermined distance greater than the length of one indexing site of a series of equally spaced apart indexing sites along the vertical upright, enabling the prong elements to be detachably connected to a pair of said sites separated by at least one indexing site,

said prong elements being substantially at a right angle with respect to the body member.

58. A rail member made from a sheet of material that is cut and bent to form said rail member, said rail member comprising

an elongated planar body member having opposed ends, each opposed end including a planar connector element adapted to interact with a vertical upright to detachably connect the rail member to the vertical upright,

each connector element comprising a pair of substantially flat prong elements spaced apart a predetermined distance of 1 inch from their centers,

said prong elements being substantially at a right angle with respect to the body member.

59. A panel adapted to form one side of a modular storage system comprising

a substantially planar section having opposed sides and opposed edges,

only one of said opposed sides having a pair of spaced apart longitudinally extending grooves therein with a series of substantially longitudinally extending openings in a row nearby each groove, said rows being substantially parallel to its nearby groove and parallel to each other, and

one of the opposed edges has therein a substantially longitudinally extending channel therein that is adapted to interact with a panel clip member

each groove being at an angle with respect to a side of the planar section that is said greater than about 5° and less than 90° , with each groove in the pair pointing away from each other.

60. A panel adapted to form an intermediate divider member of a modular storage system comprising

a substantially planar section having opposed sides and opposed edges,

both said opposed sides each having a pair of spaced apart longitudinally extending grooves therein with a series of substantially longitudinally extending openings in a row nearby each groove, said rows being substantially parallel to its nearby groove and parallel to each other,

each groove being at an angle with respect to a side of the planar section that is said greater than about 5° and less than 90° , with each groove in the pair pointing away from each other.

61. A shelf attachment device that during assembly of a modular storage system is adapted to interact with a vertical upright including a series of indexing sites positioned in a row in an equally spaced apart sequence, said shelf attachment device comprising

an elongated body with at least one segment adapted to be detachably connected to a horizontally mounted rail member,

said elongated body having an edge that is substantially vertically orientated upon connection of the shelf attachment device to a horizontally mounted rail member,

said edge including a series indexing sites positioned in a row in an equally spaced apart sequence substantially identical to the position of the indexing sites along the vertical upright.

62. The shelf attachment device of Claim 61 where the distance between sites is 1 inch on centers.

63. A shelf attachment device made from a sheet of material that is cut and bent to form the shelf attachment device, said shelf attachment device comprising

an elongated body with at least one hook segment for detachably connecting the shelf attachment device to a horizontal support member,

said elongated body having a pair of planar segments at a right angle that form an edge that is substantially vertically orientated upon connection of the shelf attachment device to a horizontal support member,

said edge including a series indexing sites positioned in a row and equally spaced apart a distance 1 inch on centers.

64. A shelf manager attachment that during assembly of a modular storage system is used to support a shelf member, said shelf manager attachment including

a pair of hook segments for detachably connecting the shelf manager attachment to a horizontal support member,

at least one support member adapted to carry a shelf member thereon and allow said shelf member to be moved laterally.

65. The shelf manager attachment of Claim 64 including a series of said support members oriented parallel to each other and spaced apart a predetermined distance.

66. A method of storing items comprising

mounting a pair of spaced apart planar members to one or more horizontal support members with at least one clip member connecting a planar member to a horizontal support member,

each said clip member having a first element that fits snugly over an edge of a horizontal support member and a second portion that fits snugly over an inside edge of the planar member to which said clip member is connected to form a rigid cantilever structure,

mounting between said planar members a horizontal shelf, and
storing on the shelf said items.

67. A kit for a modular storage system comprising

a plurality of rail members, each rail member adapted to be mounted on a substantially vertically oriented support structure in a substantially horizontal orientation, and

a plurality of panel clip members, each panel clip member having a first segment adapted to be detachably connected to one rail member mounted to the support structure and a second segment adapted to be detachably connected a panel to mount said panel in a substantially vertical orientation.

68. A modular storage system adapted to be mounted to a vertical wall, comprising

a pair of horizontal cleat members fixedly attached to the vertical wall and spaced apart vertically a predetermined distance, each cleat member including an upper horizontal edge forming an acute angle with respect to said wall,

a back panel having a pair of horizontally oriented mounting members attached to an exterior surface of the back panel, said mounting members each having a rhomboidal cross-sectional configuration and being vertically spaced apart a distance substantially equal to said predetermined distance,

at least one pair of side panels, each said side panel having an

inner edge with a pair of cut-a-way sections each having a rhomboidal cross-sectional configuration substantially identical to the rhomboidal cross-sectional configuration of the mounting members,

said pair of cut-a-way sections being spaced apart a distance substantially equal to the distance between the mounting members and each individual cut-a-way section of said pair of cut-a-way sections being seated on one of the mounting members,

said pair of side panels being spaced apart along the pair of mounting members and substantially vertically oriented and extending outward from the wall at substantially a right angle.

69. The modular storage system of Claim 68 at least one substantially horizontally oriented member extending between the side panels.

70. The modular storage system of Claim 68 where the cleat members are substantially in registration and the side panels are substantially in registration.

71. The modular storage system of Claim 68 where the cross-sectional configurations of each cleat member is substantially identical.

72. A modular storage system adapted to be mounted to a vertical wall, comprising

at least one horizontal mounting member fixedly attached to the vertical wall,

said mounting member having a predetermined cross-sectional configuration and a pair of opposed horizontal edges, each forming a predetermined angle with respect to said wall,

at least one pair of side panels, each said side panel having an

inner edge with at least one cut-a-way section having a configuration corresponding to the cross-sectional configuration of the mounting member, said side panels each being seated on the mounting member with the mounting member and cut-a-way section of each side panel fitting snugly together,

said pair of side panels being spaced apart along the mounting member and substantially vertically oriented and extending outward from the wall at substantially a right angle.

73. The modular storage system of Claim 72 including at least one substantially horizontally oriented member extending between the side panels.

74. A modular storage system adapted to be mounted to a vertical wall, comprising

pair of horizontal cleat members fixedly attached to the vertical wall and spaced apart vertically a predetermined distance,

each cleat member having a predetermined cross-sectional configuration and each cleat member including an upper horizontal edge forming an acute angle with respect to said wall,

a back panel having a pair of substantially horizontally oriented mounting members that are spaced apart vertically and fixedly attached to an exterior surface of the back panel, said mounting members each having upper and lower substantially horizontal edges and a predetermined cross-sectional configuration, said lower edge of one of the mounting members engaging the upper edge of one of the cleat members and said lower edge of the other mounting member engaging the upper edge of the other cleat member, said lower edges each having an acute angle substantially equal to the acute angle of the

cleat member upper edge being engaged,

at least one pair of side panels, each said side panel having an inner edge with a pair of cut-a-way sections, one cut-a-way section having a configuration substantially corresponding to the cross-sectional configuration of one of the mounting members and the other cut-a-way section having a configuration substantially corresponding to the cross-sectional configuration of the other mounting member,

said pair of cut-a-way sections being spaced apart a distance substantially equal to the distance between the mounting members and each individual cut-a-way section of said pair of cut-a-way sections being seated on one of the mounting members,

said pair of side panels being spaced apart a predetermined distance horizontally along the pair of mounting members and substantially vertically oriented and extending outward from the wall at substantially a right angle, and

at least one substantially horizontally oriented member extending between the side panels.

75. The modular storage system of Claim 74 where the mounting members are substantially in registration and the side panels are substantially in registration.

76. The modular storage system of Claim 75 where the cross-sectional configurations of each cleat member is substantially identical.

77. The modular storage system of Claim 76 where the cross-sectional configurations of each cleat member is substantially rhomboidal.

78. The modular storage system of Claim 74 where the cleat members each have a predetermined length that is less than the distance between the side panels, said cleat members being positioned relative to the back panel to provide a space between the wall and the cleat members into which the edge of at least one side panel is received upon being seated on the mounting members.

79. A modular storage system adapted to be mounted to a vertical wall, comprising

at least one horizontal cleat member fixedly attached to the vertical wall and having a predetermined cross-sectional configuration including an upper horizontal edge forming an acute angle with respect to said wall,

a back panel having at least one substantially horizontally oriented mounting member that is fixedly attached to an exterior surface of the back panel and has a lower edge and a predetermined cross-sectional configuration, said lower edge of the mounting member engaging the upper horizontal edge of the cleat member, said lower edge having an acute angle substantially equal to the acute angle of said upper horizontal edge of the cleat member being engaged,

at least one pair of side panels, each said side panel having an inner edge with at least one cut-a-way section having a configuration substantially corresponding to the cross-sectional configuration of the mounting member,

said pair of side panels being spaced apart a predetermined distance horizontally along the mounting member and substantially vertically oriented and extending outward from the wall at substantially a right angle, said side panels being seated on the cleat member with the cleat member and cut-a-way sections of the side

panels fitting snugly together, and

at least one substantially horizontally oriented member extending between the side panels.

80. A kit for a modular storage system comprising

a back panel having a mounting member fixedly attached to an exterior surface of the back panel, said mounting member having upper and lower substantially parallel edges and a predetermined cross-sectional configuration, said lower edge of the mounting member being adapted to engage an edge of a cleat member fixedly attached to a vertical wall in a substantially horizontal orientation so that mounting member is substantially horizontally orientated when the back panel is mounted on the cleat member,

at least one pair of side panels, each said side panel having an inner edge with at least one cut-a-way section having a configuration substantially corresponding to the cross-sectional configuration of the mounting member, said cut-a-way section being adapted to be seated snugly on the mounting member,

said pair of side panels being adapted to be spaced apart along the mounting member and substantially vertically oriented and extending outward from the wall at substantially a right angle.

81. The kit of Claim 80 where said lower edge of the mounting member is adapted to engage the upper edge the cleat member, which forms an acute angle with respect to the wall, said lower edge of the mounting member having an acute angle substantially equal to the acute angle of the cleat member edge being engaged upon mounting the side panels.